

Fire Inspector I – Course Syllabi

FI-1: Administration

Unit 1: Introduction

Topic 1: Orientation and Administration	0:30
Topic 2: Fire Prevention Certification Process	0:30

Unit 2: Role of the Fire Inspector

Topic 1: Commonly Used Terminology	1:00
Topic 2: Inspections and Compliance Methods	1:00
Topic 3: Legal Responsibilities and Authority	1:30
Topic 4: Codes and Standards	1:30
Topic 5: Ethics	4:00
Topic 6: Incident Reporting	0:30
Topic 7: Public Education	0:30

Unit 3: Inspection Documentation

Topic 1: The Inspection Process	2:00
Topic 2: Commonly Used Reports and Checklists	0:30
Topic 3: Confidentiality and Privacy Requirements	0:30

Unit 4: Complaints

Topic 1: Investigation and Documentation	0:30
Topic 2: Resolution Procedures	0:30

Unit 5: Legal Proceedings

Topic 1: Overview of the Legal Process	0:30
Topic 2: Report Preparation	0:15
Topic 3: Facts vs. Opinions	0:30
Topic 4: Subpoenas, Testimony and Depositions	0:30
Topic 5: Courtroom Demeanor and Appearance	0:15

Unit 6: Permits

Topic 1: Fire Code Permit Types	0:30
Topic 2: Permit Application and Inspection Process	1:00

Unit 7: Plan Review

Topic 1: Purpose of Plan Review	0:30
Topic 2: Activities that Require Plans Submittal	0:30
Topic 3: Basic Components of Construction Documents	1:00

Unit 8: Public Education

Topic 1: Purpose and Value	0:15
Topic 2: Community Needs Evaluation	0:30
Topic 3: Public Education Delivery Models	0:15

FI-1: Field Inspection 1A

Unit 1: Introduction

Topic 1: Orientation and Administration1:00

Unit 2: Fire Department Access and Water Supply

Topic 1: Fire Department Access0:30

Topic 2: Available Firefighting Water Supply1:00

Topic 3: Access and Water Supply Inspection0:30

Unit 3: Building System Components

Topic 1: Construction Features2:00

Topic 2: Construction Types1:30

Unit 4: Occupancy Classifications and Occupant Loads

Topic 1: Occupancy Classifications1:00

Topic 2: Determining Occupant Load1:30

Unit 5: Means of Egress

Topic 1: Means of Egress Elements1:00

Topic 2: Means of Egress Components2:00

Topic 3: Egress Inspection1:30

Unit 6: Incidental Storage, Handling, and Use of Hazardous Materials, Flammable and Combustible Liquids, and Gases

Topic 1: Classification and Properties1:30

Topic 2: Applicable Codes, Standards and Requirements2:00

FI-1: Field Inspection 1B

Unit 1: Introduction

Topic 1: Orientation and Administration1:00

Unit 2: Fire Growth Potential in a Building or Space

Topic 1: Fire Behavior.....2:00

Topic 2: Elements that Impact Fire Growth Potential.....1:30

Unit 3: Portable Fire Extinguishers

Topic 1: Components and Operation1:00

Topic 2: Inspection, Testing, and Maintenance0:30

Unit 4: Existing Fixed Fire Suppression Systems

Topic 1: Water-Based Fire Protection Systems3:00

Topic 2: Special-Agent Fire Extinguishing Systems1:00

Unit 5: Existing Fire Detection and Alarm Systems

Topic 1: Fire Alarm Systems and Components0:30

Topic 2: Inspection, Testing and Maintenance1:00

Unit 6: Hazardous Conditions Involving Equipment, Processes, and Operations

Topic 1: Recognition of Hazardous Conditions.....1:00

Unit 7: Fire Potential in the Wildland Urban Interface Environment

Topic 1: History.....1:00

Topic 2: Fire Behavior in a Wildland Urban Interface.....1:30

Topic 3: Fire Hazard Severity Zones.....1:00

Topic 4: Wildland Urban Interface Issues.....1:30

Unit 8: Tents, Canopies and Temporary Membrane Structures

Topic 1: Tents, Canopies and Temporary Membrane Structures1:00

Unit 9: Emergency Planning and Preparedness Measures

Topic 1: Emergency Evacuation and Relocation Requirements and Elements0:30

Topic 2: Conducting an Emergency Evacuation Drill0:30

FI-1: Fireworks and Explosives

Unit 1: Introduction

Topic 1: Orientation and Administration0:30

Unit 2: Laws and Regulations

Topic 1: Laws and Regulations0:30

Unit 3: Fireworks

Topic 1: Classifications.....0:30

Topic 2: Licenses and Permits.....1:00

Topic 3: Storage0:30

Topic 4: Seizure0:30

Topic 5: Retail Fireworks Stands0:30

Topic 6: Special Effects0:30

Topic 7: Public Display.....1:00

Topic 8: Model Rockets.....0:30

Unit 4: Explosives

Topic 1: Identification1:00

Topic 2: Licenses and Permits.....0:30



Course: FI-1: Administration

CFSTES

Hours: 25:00 (21:30 = instruction / 3:30 = testing)

Designed For: The entry-level fire inspector

Description: After completion of this course, the student will have an understanding of certification and capstone testing and the role of the fire inspector including commonly used terms, the importance of fire prevention, compliance using enforcement and legally established responsibilities, the value of ethics and public education, writing and maintaining inspection reports, and legal proceedings including the inspection process and courtroom preparation and decorum.

Prerequisites: None

Passing Criteria: 80%

Certification: Fire Inspector I

Class Size: 30

Restrictions: None

REQUIRED STUDENT MATERIALS	EDITION	VENDORS
▪ California Fire Code	current	International Code Council (ICC)
▪ <i>Fire Inspection and Code Enforcement</i>	7th	IFSTA
REQUIRED INSTRUCTOR MATERIALS	EDITION	VENDORS
▪ California Building Code	current	International Code Council (ICC)
▪ California Fire Code	current	International Code Council (ICC)
▪ CCR Title 19	current	www.oal.ca.gov/publications.htm
▪ <i>Fire Inspection and Code Enforcement</i>	7th	IFSTA
VENDORS		
SFT	State Fire Training Bookstore (916-445-8158)	http://sft.fire.ca.gov

FI1 - ADMINISTRATION COURSE SYLLABUS

Course Objectives: to provide the student with...

- a) A basic knowledge of the role of the fire inspector
- b) A basic knowledge of writing and maintaining permits and reports
- c) A basic knowledge of investigating, documenting and resolving complaints
- d) A basic knowledge of the legal process as it relates to the role of the fire inspector
- e) A basic knowledge of permit types and process
- f) A basic knowledge of plan review as it relates to construction features and fire protection systems
- g) A basic knowledge of the value of public education, delivery methods and community-based messages
- h) An opportunity to conduct a basic fire inspection and create inspection documentation

Course Content 25:00

Unit 1: Introduction

FI1 - ADMINISTRATION COURSE SYLLABUS

Topic 1: Orientation and Administration 0:30
Terminal Learning Objective (TLO): At the end of this topic, the student will be able to
Enabling Learning Objectives (ELO):
1. [text]
Discussion Questions
1. [text]
Activities
1. [text]
Evaluation: [text]

Topic 2: Fire Prevention Certification Process..... 0:30
Terminal Learning Objective (TLO): At the end of this topic, the student will be able to
Enabling Learning Objectives (ELO):
1. Understand different levels of certification
2. Understand the capstone testing process
Discussion Questions
1. [text]
Activities
1. [text]
Evaluation: Formative Test, Summative Test

Unit 2: Role of the Fire Inspector (CTS: 1-1 and 1-3)

Topic 1: Commonly Used Terminology 1:00
Terminal Learning Objective (TLO): At the end of this topic, the student will be able to define common terms found in commonly-used fire prevention codes and references.
Enabling Learning Objectives (ELO):
1. Define common terms and definitions found in the current California Building Code, California Fire Code, NFPA 1031, *Fire Inspection and Code Enforcement (IFTSA)*
Discussion Questions
1. What is "occupancy"?
2. What is the difference between a "code" and a "standard"?
Activities
1. Match definitions to terms
Evaluation: Formative Test, Summative Test

Topic 2: Inspections and Compliance Methods..... 1:00
Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the need for inspections and code compliance methods.
Enabling Learning Objectives (ELO):
1. Describe the need for inspections, including:
• Fire and life safety enhancement
• Community hazard reduction
• Firefighter safety improvement
2. Describe methods for obtaining code compliance through education, engineering, and enforcement

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(3Es), including:

- Inspection warrants
- Appeals
- Alternate means and methods

Discussion Questions

1. What are the different aspects of education, engineering, and enforcement?
2. What components are necessary to justify an inspection warrant?

Activities

1. Discuss case law established through *See vs. Seattle* (1967)

Evaluation: Formative Test, Summative Test

Topic 3: Legal Responsibilities and Authority1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify inspection authority and regulatory requirements as well as an AHJ's liability for failure to perform.

Enabling Learning Objectives (ELO):

1. Identify the inspection authority in the California Health and Safety Code
2. Identify the regulatory requirements found in:
 - California Code of Regulations (CCR) Title 19 (Public Safety)
 - CCR Title 24 part 2 (Building Code)
 - CCR Title 24 part 9 (Fire Code)
 - Local adoption and enforcement authority
3. Describe the jurisdictional organizations other than the fire department that have requirements or conduct inspections relating to fire prevention and life safety, including:
 - Building department
 - Planning department
 - Public works engineering
 - Water department
 - Law enforcement
 - Division of Occupational Safety and Health (elevators)
 - Office of Statewide Health Planning and Development (OSHPD) (hospitals)
 - Division of the State Architect (DSA) (public schools)
4. Describe the additional jurisdictional organizations that have requirements or conduct inspections relating to the wildland urban interface environment, including:
 - Other local fire agencies
 - CalFire
 - U.S. Forest Service
 - Bureau of Land Management
 - Park Service
 - Department of Fish and Game
 - Fire Safe Council
5. Identify an AHJ's liability for failure to perform

Discussion Questions

1. Can a fire inspector be held liable for negligence?
2. What occupancies does the state regulate?
3. Where does a fire inspector get his or her authority?

Activities

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1. Discuss *Widmar vs. Marysville* (fire = 1974 / resulting law = 1984)

Evaluation: Formative Test, Summative Test

Topic 4: Codes and Standards1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify common codes and standards used in fire prevention and other California adopted codes, standards, and statutes, and understand that code adoption processes vary by jurisdiction.

Enabling Learning Objectives (ELO):

1. Identify and be familiar with commonly-used codes and standards published by:
 - International Code Council (ICC codes)
 - National Fire Protection Association (NFPA standards)
2. Identify and be familiar with codes and standards adopted as part of CCR Title 24 by the California Building Standards Commission, including:
 - California Building Code (part 2)
 - California Fire Code (part 9)
 - California Residential Code (pending adoption)
3. Identify other codes and standards adopted in California as part of CCR Title 24 including:
 - California Electrical Code (part 3)
 - California Mechanical Code (part 4)
 - California Plumbing Code (part 5)
 - California Energy Code (part 6)
 - California Elevator Safety Construction Code (part 7)
 - California Historical Building Code (part 8)
 - California Code for Building Conservation (part 10)
 - California Reference Standards Code (part 12)
4. Identify statutes that relate to fire protection, including:
 - California Government Code (GC)
 - California Health and Safety Code (HSC)
 - California Public Resources Code (PRC)
5. Describe jurisdictional local code adoption processes and specific statutory justifications for amending state codes requirements, including:
 - Geographic conditions
 - Topographic conditions
 - Climatic conditions

Discussion Questions

1. What is the difference between a statute and a regulation?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 5: Ethics4:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to understand ethics-related terminology and describe how ethical decision-making and behavior impact a fire inspector's work environment.

Enabling Learning Objectives (ELO):

1. Identify definitions and terminology, including but not limited to:

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- Ethics
 - Core values
2. Describe how one's ethics and core values impact the work environment
 3. Describe the ethical aspects of:
 - Code enforcement
 - Decision-making models and systems
 - Principle-centered decision making
 - Gifts and gratuities
 - Professional decorum

Discussion Questions

1. When is it acceptable to receive a "gift" during a fire inspection?
2. If the inspector knows the business operator or owner personally, what practical steps should he or she take when conducting an inspection?

Activities

1. Ethical Awareness Inventory
2. Case studies

Evaluation: Formative Test, Summative Test

Topic 6: Incident Reporting.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the purpose of NFIRS and local reporting systems and how they impact fire prevention.

Enabling Learning Objectives (ELO):

1. Describe the type of data collected in a local incident reporting system, including:
 - Incident location
 - Dollar loss
 - Origin and cause
 - Injuries and deaths
 - Fire prevention effectiveness
 - Number of incidents
2. Describe how local incident reporting relates to the National Incident Fire Reporting System (NFIRS)
3. Describe how incident report data (fire trend tracking) ultimately impacts fire prevention

Discussion Questions

1. What information should an inspector collect during an inspection that would be valuable in an emergency incident?
2. What fire incident information would be valuable in conducting a fire prevention inspection?

Activities

1. Share examples of incident reporting forms.

Evaluation: Formative Test, Summative Test

Topic 7: Public Education.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe a basic public education campaign.

Enabling Learning Objectives (ELO):

1. Describe the public education process, including:
 - Assessing community risk (wildland urban interface, industrial, elderly populations, school-aged children, etc.)

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- Developing content to address the identified issue
- Choosing a delivery model (public speaking, presentations, etc.)
- Creating awareness through message delivery
- Evaluating impact

Discussion Questions

1. What are the culture-specific issues in your community?
2. What information and materials should a fire agency prepare in advance of an emergency?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 3: Inspection Documentation (CTS: 1-2 and 1-4)

Topic 1: The Inspection Process 2:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to prepare for, carry out, document and report on, and follow up on an inspection.

Enabling Learning Objectives (ELO):

1. Describe preparations for an inspection, including:
 - Reviewing past records
 - Reviewing last inspection date
 - Reviewing past violations and compliance
 - Gathering necessary records or checklists
 - Gathering safety equipment and clothing appropriate for the inspection conditions
 - Making an inspection appointment if necessary
2. Describe the physical inspection process, including:
 - Making introductions and stating inspection purpose
 - Gaining right of entry (voluntary)
 - Obtaining an inspection warrant (if owner refuses entry)
 - Verifying the occupancy and determining if there is a change of use or occupancy
 - Inspecting the building in an orderly manner (systematic approach)
 - Inspecting operational and hazardous processes
 - Reviewing inspection findings and compliance requirements with occupant
3. Describe documenting and reporting an inspection, including:
 - Writing the report which may include:
 - Violations observed
 - Corrective action
 - Time allowed for compliance
 - Code sections (if applicable)
 - Ensuring proper documentation, accuracy, and completeness
 - Use clear writing, and proper grammar and spelling
 - Identify premise, owner, and contact information
 - Identify violations, code sections cited, and descriptions
 - Identify applicable codes and standards
 - Identify a timeframe for violation compliance
 - Identify penalties for failure to correct violations
 - Realize that others will read and use your documents

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- Realize that initial inspection reports can become part of a legal process
 - Distributing the report
4. Describe the inspection report follow-up process, including:
 - Documenting remaining violations and issue additional notices of violation as necessary
 - Re-inspection to confirm correction of violations
 - Documentation to verify compliance with violations
 5. Describe how to document violations:
 - Require immediate compliance for imminent hazards
 - Allow 15-30 days for compliance after first inspection for standard violation
 - Allow 15-30 days after re-inspection for standard violations
 - Take legal action in conformance with agency requirements for failure to comply

Discussion Questions

1. When should an inspector provide a verbal notice of a hazard and not document the violation?
2. What documents should an inspector review prior to the inspection?

Activities

1. Using a well-written inspection report as an example, provide students with violations from an inspection and have them write their own report.

Evaluation: Formative Test, Summative Test

Topic 2: Commonly Used Reports and Checklists.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify the uses and content of typical templates used in fire inspections.

Enabling Learning Objectives (ELO):

1. Identify template types, including:
 - Correction letters
 - Notices of violation
 - Notice and orders
 - Occupancy-specific violation checklists

Discussion Questions

1. What are the advantages of a checklist?
2. What are the disadvantages of a checklist?

Activities

1. Review samples of common templates and checklists.

Evaluation: Formative Test, Summative Test

Topic 3: Confidentiality and Privacy Requirements.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify agency policies on public records and an organization's right to maintain trade secrets, and describe aspects of anonymity and confidentiality related to inspection documents.

Enabling Learning Objectives (ELO):

1. Describe how to obtain agency policies on which records are considered public records
2. Describe a company's rights to maintain trade secrets (processes and ingredients/components) (CUPA)
3. Describe the rights of a complaining party to remain anonymous when reporting a violation
4. Describe how documents related to active inspections and code violations must remain confidential without specific court orders if a violation may result in legal action

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Discussion Questions

1. When is an inspection history confidential?
2. What information should remain unavailable to the public?
3. What does a business have to do to protect its trade secret processes?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 4: Complaints (CTS: 1-7)

Topic 1: Investigation and Documentation 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to receive and document a complaint, check records for similar violations, validate a complaint, maintain complainant confidentiality, and describe how political pressure can influence the complaint process.

Enabling Learning Objectives (ELO):

1. Describe how to properly receive and document a complaint
2. Describe how to check records for similar violations
3. Describe how to validate a complaint (inspection vs. records search)
4. Describe how to maintain complainant confidentiality
5. Describe the influences of political pressure

Discussion Questions

1. How would you prioritize a complaint received?
2. How would you respond to a non-fire-hazard complaint?
3. What are the steps in a complaint resolution process?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Resolution Procedures 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to resolve or refer a complaint.

Enabling Learning Objectives (ELO):

1. Describe how to determine the appropriate agency to act on the complaint
2. Describe how to refer a complaint to the appropriate agency
3. Describe how to act on a complaint
4. Describe how to issue a notice of violation for a validated complaint
5. Describe how to follow up to confirm compliance

Discussion Questions

1. What types of complaints would an inspector refer to another agency or department?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 5: Legal Proceedings (CTS: 1-8)

Topic 1: Overview of the Legal Process 0:30

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Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe and identify various terms and legal processes.

Enabling Learning Objectives (ELO):

1. Describe how to consult agency legal counsel
2. Describe the difference between criminal and civil proceeding
3. Describe case preparation
4. Describe case filing (agency initiation) vs. subpoena (external initiation)
5. Describe depositions
6. Describe testimony
7. Describe judgment
8. Describe subpoenas
9. Describe the influence of political pressure
10. Describe indirect documents (emails, phone records, etc.)
11. Describe expert testimony

Discussion Questions

1. When should a fire inspector seek legal counsel?
2. Who should be notified if a fire inspector receives a subpoena?
3. Should a fire inspector make statements without legal counsel (depositions)?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Report Preparation0:15

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to properly prepare a report for court including maintaining confidentiality, compiling records, developing timelines, collecting supporting documents, and responding to requests for legal and certified documents as required by agency counsel.

Enabling Learning Objectives (ELO):

1. Describe how to maintain confidentiality
2. Describe how to compile all case-related records
3. Describe how to develop timelines documenting enforcement activities
4. Describe how to collect supporting documents
5. Describe how to respond to a request for all legal and certified documents as required by agency counsel

Discussion Questions

1. What are the steps in preparing documents for court?
2. Who should review the documents prior to their release?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 3: Facts vs. Opinions0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to differentiate between facts and opinions.

Enabling Learning Objectives (ELO):

1. Identify facts as documentation, including:

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- Physical evidence
 - Photographs
 - Witness statements
 - First responder statements
2. Identify opinions as not admissible, including:
- Personal biases
 - Hearsay
 - Irrelevant statements

Discussion Questions

1. What are examples of facts as related to a fire inspection?
2. What are examples of opinions that should not influence a case?
3. When should a fire inspector give an opinion?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 4: Subpoenas, Testimony and Depositions0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to respond to a subpoena and give testimony or a deposition.

Enabling Learning Objectives (ELO):

1. Describe the use of a subpoena, including:
 - Court-ordered
 - Used to collect evidence in a case
2. Describe the purpose of a preliminary meeting with counsel prior to deposition or testimony
3. Describe a deposition, including:
 - Court-ordered
 - Takes place outside courtroom
 - Sworn in and recorded
 - Both counsels present
 - No jury
 - Examined and cross examined
 - Transcription reviewable
 - Becomes a legal document and can be used against you in court
4. Describe testimony, including:
 - Inside courtroom
 - Sworn in
 - Judge and/or jury present
 - Examined and cross examined

Discussion Questions

1. In what situation might a deposition be ordered?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 5: Courtroom Demeanor and Appearance0:15

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to prepare to

properly provide testimony in a courtroom setting.

Enabling Learning Objectives (ELO):

1. Describe proper courtroom demeanor and appearance, including:
 - Wearing appropriate attire
 - Being well groomed
 - Using a professional tone of voice
 - Restraining unnecessary body language
 - Maintaining direct eye contact
 - Maintaining a professional attitude (argumentative vs. pleasant)
 - Answering all questions truthfully
 - Allowing objection time between question and answer
 - Avoiding volunteering information
 - Moderating reactions to questions and activities during testimony

Discussion Questions

1. What is appropriate attire for a court appearance?
2. When should a fire inspector interrupt an attorney during testimony?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 6: Permits (CTS: 1-5)

Topic 1: Fire Code Permit Types.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe construction and operational permits and permitting requirement thresholds.

Enabling Learning Objectives (ELO):

1. Describe construction permits (California Fire Code)
2. Describe operational permits (California Fire Code)
3. Describe permitting requirement thresholds

Discussion Questions

1. What are examples of operational permits in your local community?
2. What types of construction permits does the fire code regulate?

Activities

1. Activity 6-1: Fire Code Permit Types

Evaluation: Formative Test, Summative Test

Topic 2: Permit Application and Inspection Process.....1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the components of a completed application, how to maintain permits and documentation, the conditions that prevent issuing or dictating revocation of a permit, and the construction and operational permit processes.

Enabling Learning Objectives (ELO):

1. Describe the components of a completed application, including:
 - Contact information
 - Project description
 - Licensing information

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- Workers compensation insurance
- Fee payment prior to issuing permit
- 2. Describe how to maintain permits and documentation
- 3. Describe conditions preventing issuance or dictating revocation of a permit
- 4. Describe construction permit process, including:
 - Plan submittal
 - Plan review
 - Approval or correction
 - Permit approval, project inspections
 - As-built drawings
 - Completion record, final
- 5. Describe operation permit process, including:
 - Documentation submittal (plans and processes)
 - Site inspection
 - Permit approval

Discussion Questions

1. What are some typical operational permits?
2. Under what conditions should a fire inspector deny or revoke a permit?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 7: Plan Review (CTS: 1-6 and 3-5)

Topic 1: Purpose of Plan Review0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the purpose of plan review.

Enabling Learning Objectives (ELO):

1. Describe the purpose of plan review, including:
 - Documenting proposed activities for construction or modifications (tenant improvement) to a location regulated by the California Building Code and California Fire Code
 - Identifying the project designer and installer
 - Discovering discrepancies or omissions in the design that must be changed prior to project approval
 - Ensuring compliance with applicable codes, standards and practices
 - Approving a construction project or a process
 - Issuing a permit for an activity or process

Discussion Questions

1. What is the primary purpose of plan review?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Activities that Require Plans Submittal0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify when plans must be submitted.

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Enabling Learning Objectives (ELO):

1. Describe the activities that would require the submittal of a set of plans:
 - New construction
 - Modifications to an existing structure (including tenant improvement)
 - Change of occupancy
 - Change in operational use

Discussion Questions

1. What activities do not require a permit?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 3: Basic Components of Construction Documents.....1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify construction documents, plan components, common fire protection symbols and terminology, and will be able read and comprehend plans for fire protection systems.

Enabling Learning Objectives (ELO):

1. Identify types of construction documents, including:
 - Plans
 - Cut sheets
 - Calculations
 - Technical reports
 - Specifications
2. Identify components of a plan, including:
 - Title sheet
 - Table of contents
 - Scope of work
 - Designer's information
 - General conditions
 - Compass point
 - Revision block
 - Key plan
 - Deferred submittals
 - Title block (all sheets)
 - Scale (all sheets)
 - Views
 - Plan
 - Elevation
 - Section
 - Detailed
3. Identify common fire protection symbols and terminology related to:
 - Fire alarms
 - Fire sprinklers
 - Special systems
 - Fire protection
 - (See NFPA 170)

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4. Describe and demonstrate reading and comprehending plans for fire protection systems

Discussion Questions

1. What is the difference between plan view and elevation view?
2. Where would you find installation details for a commercial hood system in a set of plans?

Activities

1. Given a set of plans, identify the key components, symbols, and terminology.

Evaluation: Formative Test, Summative Test

Unit 8: Public Education (CTS: 2-1)

Topic 1: Purpose and Value0:15

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the purpose and value of public education.

Enabling Learning Objectives (ELO):

1. Describe the purpose and value of public education, including:
 - Creating awareness
 - Educating and informing the public
 - Changing behavior
 - Creating public relations

Discussion Questions

1. What is the purpose of public education?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Community Needs Evaluation0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to determine community needs.

Enabling Learning Objectives (ELO):

1. Describe how to use demographics
2. Identify geographical features
3. Identify climatic conditions that pose a threat to the community
4. Identify conditions in the wildland urban interface that pose a threat to the community
5. Identify special hazards that exist in the community

Discussion Questions

1. What are the cultural needs of your community?

Activities

1. Conduct community risk analysis based on a hypothetical community and determine priorities for public education.

Evaluation: Formative Test, Summative Test

Topic 3: Public Education Delivery Models0:15

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to select a delivery method and evaluate the effectiveness of a public education campaign.

Enabling Learning Objectives (ELO):

1. Identify ways to deliver public education, including:

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- Community meetings
 - Government meetings
 - School presentations
 - Lectures
 - Seasonal events
 - On-site training at a specific location or hazard
 - Print and web articles regarding public education in community publications
 - Public service announcements (PSA)
2. Describe evaluating the outcome of a public education message, including:
- Identifying loss reduction
 - Identifying risk reduction
 - Measuring outcomes against goals and objectives and interpret results
 - Soliciting participant feedback
 - Determining the need for program modification

Discussion Questions

1. When should an inspector prepare a PSA?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Activity 6-1: Fire Code Permit Types

Identify which activities or operations require an operational permit and which require a construction permit.

Activity or Operation	Required Permit	
1. Spraying or dipping	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
2. Aviation facilities	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
3. Exhibits and trade shows	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
4. Combustible Fibers	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
5. Flammable liquids	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
6. Floor finishing	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
7. Automatic fire extinguishing systems	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
8. Compressed gas systems	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
9. Lumber yards	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
10. Modifying an alarm system	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
11. Installing a Class B furnace (industrial oven)	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
12. Places of assembly	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
13. Private fire hydrant in a commercial complex	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
14. Waste handling	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational
15. Temporary tent installation	<input type="checkbox"/> Construction	<input type="checkbox"/> Operational

Activity 6-1: Fire Code Permit Types

Answer Key

1. Spraying or dipping: C / O
2. Aviation facilities: O
3. Exhibits and trade shows: C
4. Combustible fibers: C
5. Flammable liquids: C / O
6. Floor finishing: O
7. Automatic fire-extinguishing systems: C
8. Compressed gas systems: C / O
9. Lumber yards: O
10. Modifying a fire alarm system: C
11. Installing a Class B furnace (industrial oven): C
12. Places of assembly: O
13. Private fire hydrant in a commercial complex: C / O
14. Waste handling: O
15. Temporary tent installation: C / O



Course: FI-1: Field Inspection 1A

CFSTES

Hours: 20:00 (17:00 = instruction / 3:00 = testing)

Designed For: The entry-level fire inspector

Description: At the completion of this course the student will have an introductory knowledge of fire department access and water supply, building system components, occupancy classifications and occupant loads, means of egress, and incidental storage, handling and use of hazardous materials, flammable and combustible liquids, and gases.

Prerequisites: FI-1: Administration

Passing Criteria: 80%

Certification: Fire Inspector I

Class Size: 30

Restrictions: None

REQUIRED STUDENT MATERIALS	EDITION	VENDORS
▪ California Fire Code	current	International Code Council (ICC)
▪ <i>Fire Inspection and Code Enforcement</i>	7th	IFSTA
REQUIRED INSTRUCTOR MATERIALS	EDITION	VENDORS
▪ California Building Code	current	International Code Council (ICC)
▪ California Fire Code	current	International Code Council (ICC)
▪ CCR Title 19	current	www.oal.ca.gov/publications.htm
▪ <i>Fire Inspection and Code Enforcement</i>	7th	IFSTA
VENDORS		
SFT	State Fire Training Bookstore (916-445-8158)	http://sft.fire.ca.gov

FI1 – FIELD INSPECTION 1A COURSE SYLLABUS

Course Objectives: to provide the student with:

- a) An introduction to fire department access and water supply
- b) An introduction to building system components
- c) An introduction to occupancy classifications and occupant loads
- d) An introduction to means of egress
- e) An introduction to incidental storage, handling, and use of hazardous materials, flammable and combustible liquids, and gases

Course Content 17:00

Unit 1: Introduction

Topic 1: Orientation and Administration 1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to

Enabling Learning Objectives (ELO):

Discussion Questions

- 1. [text]

Activities

1. [text]

Evaluation: Formative Test, Summative Test

Unit 2: Fire Department Access and Water Supply (CTS 3-11 and 3-14)

Topic 1: Fire Department Access.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify the requirements and specifications for fire department emergency access.

Enabling Learning Objectives (ELO):

1. Identify the requirements for fire department access (refer to local requirements), including:
 - Access must be provided to within 150 feet of all portions of the exterior of the building
 - Access more than 150 feet must be provided with a approved turn around
2. Identify the specifications for a required fire department access roadway, including:
 - Width should be a minimum of 20 feet clear width
 - Turn radii must be in conformance with local apparatus
 - Height minimum 13 feet 6 inches
 - Weight must be in conformance with local apparatus axle loads
 - Must have all-weather driving surface
 - Slope of the road must be approved locally (see CFC Appendix D)
 - Bridges must be designed to support fire apparatus
 - Signage and curb marking must be provided in compliance with the California Vehicle Code

Discussion Questions

1. Why do local jurisdictions require fire lanes?
2. What constitutes an all-weather driving surface?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Available Firefighting Water Supply1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify the necessary tools to evaluate available water flow, identify issues that impact water flow testing, describe the impact of hydrant spacing and indentify hydrant types, and identify and describe water distribution systems and water sources.

Enabling Learning Objectives (ELO):

1. Identify the tools needed to evaluate available water flow, including:
 - Pitot gauge
 - Pressure gauge
 - Water map showing mains and direction of flow
 - Diffusers
2. Identify issues that impact water flow testing, including:
 - Discharge requirements (National Pollutant Discharge Elimination System)
 - Flood control authority policies
 - Water purveyor policies
3. Describe how hydrant spacing impacts firefighting operations
4. Identify different hydrant types

F11 – FIELD INSPECTION 1A COURSE SYLLABUS

5. Identify water distribution systems, including:
 - Private vs. public systems
 - Private vs. public fire hydrants
6. Describe how dead end water lines impact available fire flow
7. Describe approved water sources

Discussion Questions

1. How do you determine the fire flow for a building or project?
2. How does the installation of fire sprinklers affect fire flow?
3. What sprinkler systems qualify for fire flow reductions?
4. What are the minimum fire flow requirements for commercial and residential projects?
5. How do you determine hydrant spacing?
6. Is a recycled water system an approved water source for firefighting?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 3: Access and Water Supply Inspection0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to properly inspect, verify proper maintenance of, and verify deficiencies of a location for fire department access and water supply.

Enabling Learning Objectives (ELO):

1. Describe how to verify that a fire department access road was required as part of construction, including:
 - Ensuring proper and adequate addressing for the property
 - Ensuring all access keys (if provided) are correct and in the key box
 - Verifying proper fire lane maintenance
 - Verifying proper fire department access maintenance
 - Verifying provision of proper fire lane signage
2. Describe how to verify proper maintenance of required water supplies, including:
 - Verifying access to hydrants maintenance
 - Verifying proper maintenance of private hydrants in accordance with CCR Title 19
3. Describe how to verify deficiencies, including:
 - Observation and documentation
 - Reporting in accordance with jurisdictional codes, standards, and policies
 - Referring to appropriate level when necessary

Discussion Questions

1. What code requires access and water supply for firefighting?
2. What does the code require as the minimum clear height for a fire lane?
3. What does the code state as the minimum width of a fire lane?
4. Who designates fire lanes?
5. Who enforces no parking requirements in a fire lane for your community?

Activities

1. To be determined by instructor

Evaluation: Formative Test, Summative Test

Unit 3: Building System Components (CTS: 3-4)

Topic 1: Construction Features 2:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify the basic features of construction components.

Enabling Learning Objectives (ELO):

1. Identify the basic features of the following construction components, including:

- Foundations
- Exterior walls
- Floor and ceiling assemblies
- Roof covering and assembly classifications
- Fire barriers
- Fire partitions
- Fire walls
- Fire-resistant joint systems
- Enclosed stairs
- Horizontal assemblies (exit corridors, horizontal exits, rated, unrated)
- Opening protection
- Penetration protection
- Shaft enclosures
- Smoke barriers
- Smoke partitions
- Draft stops
- Attic stops
- Interior finishes
- Fire sprinkler systems (impacts other features)

Discussion Questions

1. What is the purpose of a draft stop?
2. What are the components of a fire wall?
3. What is the purpose of a parapet?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Construction Types..... 1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify types of construction and confirm that construction methods comply with code requirements.

Enabling Learning Objectives (ELO):

1. Identify construction types (methods and materials), including:

- Type I (A and B) – CBC, Chapter 6, Table 601; IFSTA, p. 124 (7th ed.), Table 4.1
- Type II (A and B) – CBC, Chapter 6, Section 602.2 and Table 601; IFSTA, p. 124 (7th ed.), Table 4.1
- Type III (A and B) – CBC, Chapter 6, Section 602.3; IFSTA, p. 124 (7th ed.), Table 4.1
- Type IV – Heavy Timber - CBC, Chapter 6, Section 602.4; IFSTA, p. 124 (7th ed.), Table 4.1
- Type V (A and B) – Wood Frame – CBC, Chapter 6, Section 602.5; IFSTA, p. 124 (7th ed.), Table 4.1

2. Describe construction type in additions and remodels and confirming that construction methods comply with code requirements

Discussion Questions

1. What are the different types of construction?
2. What type of construction does the code approve for hospitals?

Activities

1. Mix and match exercise to identify correctly the components of different types of construction.

Evaluation: Formative Test, Summative Test

Unit 4: Occupancy Classifications and Occupant Loads (CTS: 3-1 and 3-2)

Topic 1: Occupancy Classifications.....1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify occupancy-related codes, regulations and standards; the correct occupancy classification for various occupancies and uses; and occupancy-related fire and life safety hazards.

Enabling Learning Objectives (ELO):

1. Identify how occupancy classifications are determined by the building official
2. Identify the applicable codes, regulations and standards
3. Identify fire or life safety hazards presented by various occupancies
4. Identify occupant load factors for all uses and occupancies
5. Identify operational features that change the occupancy classification
6. Identify state-regulated occupancy classifications
7. Describe how the classifications and uses of a building can be distinct and different within a single building, including:
 - Mixed-use
 - Single-use

Discussion Questions

1. What is the difference between gross and net square footage?
2. Who determines occupant classifications and occupant loads?
3. What occupant load factors are used for assembly uses?
4. What is a mixed-use occupancy?

Activities

1. Fill-in-the-blank occupancy classification identification.

Evaluation: Formative Test, Summative Test

Topic 2: Determining Occupant Load1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to correctly determine the occupant load of a building or a portion of a building based on use and square footage.

Enabling Learning Objectives (ELO):

1. Identify the function of the area to be evaluated
2. Identify the correct occupant load factor based on function using Table 1004.1.1 – Maximum Floor Area Allowances Per Occupant (CFC or CBC)
3. Describe how to determine square footage, including:
 - Gross square footage: the inside dimension of the exterior walls of a building
 - Net square footage: the actual occupied area excluding shafts, unoccupied areas, stairways, etc. (See CBC Chapter 10 definitions)
4. Identify the use of and various measuring tools used to determine occupant load, including:
 - Plans and scales
 - Field measuring devices

- Ceiling tiles
- Floor tiles

Discussion Questions

1. What are the purposes and uses of a building's occupant load?
2. When does the code require the posting of an occupant load?

Activities

1. Given several scenarios, determine the occupancy and occupant load.

Evaluation: Formative Test, Summative Test

Unit 5: Basic Means of Egress (CTS: 3-3)

Topic 1: Means of Egress Elements.....1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe exit access, exits and exit discharge.

Enabling Learning Objectives (ELO):

1. Describe exit access, including:
 - Corridors
 - Aisles
 - Pathways leading to an exit
 - Unenclosed ramps
 - Occupied rooms
2. Describe exits, including:
 - Number required
 - Doors
 - Exit passageways
 - Exit corridors
 - Protected or exterior stairwells
3. Describe exit discharge, including:
 - Exterior walkways
 - Private driveways and alleys

Discussion Questions

1. How does an inspector determine exit width?
2. What does the code cite as the minimum required exit width?

Activities

1. Given a list of terms, identify each term as an exit, exit access, or exit discharge

Evaluation: Formative Test, Summative Test

Topic 2: Means of Egress Components.....2:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe means of egress components, pathway illumination, emergency lighting, exit signs and illumination, special egress control devices, access-controlled egress doors, travel distance, and be able to identify, document and report means of egress deficiencies.

Enabling Learning Objectives (ELO):

1. Describe means of egress components, including:
 - Doors
 - Door swing

FI1 – FIELD INSPECTION 1A COURSE SYLLABUS

- Hardware
 - Corridors
 - Walls
 - Ceilings
 - Floors
 - Stairs
 - Ramps
 - Fire escape ladders
 - Fire escape slides (slidescapes)
2. Describe egress pathway illumination
 3. Describe emergency lighting
 4. Describe exits signs and exit sign illumination
 5. Describe special egress control devices
 6. Describe access controlled egress doors
 7. Describe travel distance (fire sprinklers, horizontal exits, active vs. passive)
 8. Describe how to identify, document and report deficiencies

Discussion Questions

1. What is the difference between a fire door and a smoke and draft assembly?
2. What mandates the maintenance of fire escapes?
3. When does the code require pathway illumination?
4. When does the code require floor-level exit signs?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 3: Egress Inspection 1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to determine occupancy-based egress requirements and egress maintenance conditions.

Enabling Learning Objectives (ELO):

1. Describe occupancy-based egress requirements, including:
 - Occupant load
 - Travel distance
 - Number of exits
 - Separation
2. Describe egress maintenance conditions, including:
 - Operational doors
 - Unobstructed pathways
 - Proper illumination
 - Proper signage

Discussion Questions

1. Is an exterior path of egress part of an exit system?
2. Is a door that is part of a listed assembly always required to be self closing?
3. When does the code allow an exit to terminate before reaching a public way?

Activities

1. Given a plan, determine occupancy classification, square footage, occupant load, number of exits required, exit separation, door hardware, signage, and illumination.

Evaluation: Formative Test, Summative Test

Unit 6: Incidental Storage, Handling, and Use of Hazardous Materials, Flammable and Combustible Liquids, and Gases (CTS 3-12)

Topic 1: Classification and Properties 1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify physical and chemical properties of liquids, gases and solids; describe the physical and health hazards of liquids, gases and solids; and identify ways to determine chemical information including the use of a Materials Safety Data Sheet.

Enabling Learning Objectives (ELO):

1. Define solid, liquid and gas
2. Identify physical properties of liquids, gases and solids, including:
 - Color
 - Smell
 - Freezing point
 - Boiling point
 - Melting point
 - Opacity
 - Viscosity
 - Density
 - Specific gravity
 - Vapor density
 - Vapor pressure
 - Water solubility
 - Flammable/explosive range
 - Flashpoint
 - Evaporation rate
3. Identify chemical properties liquids, gases and solids, including:
 - Heat of combustion
 - Reactivity with water
 - pH scale
4. Describe the physical hazards of:
 - Explosives and blasting agents
 - Flammable and combustible liquids
 - Flammable solids and gases
 - Organic peroxide materials
 - Oxidizer materials
 - Pyrophoric materials
 - Unstable (reactive) materials
 - Water reactive solids and liquids
 - Cryogenic fluids
 - Combustible fibers
5. Describe the health hazards of:
 - Highly toxic materials
 - Toxic materials

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- Corrosive materials
6. Identify ways to determine chemical information, including:
 - Material Safety Data Sheet
 - Labels
 - Shipping documents
 - References (ERG, NIOSH, etc.)
 7. Identify the common components of a Material Safety Data Sheet, including:
 - Chemical identity
 - Manufacturer information
 - Hazardous ingredients
 - Physical and chemical characteristics
 - Fire and explosion hazard data
 - Reactivity data
 - Health hazard data
 - Precautions for safe handling and use
 - Control measures

Discussion Questions

1. What chemical properties have a significant impact on code requirements?
2. How do you classify a chemical?
3. Where do you find the properties for a specific chemical?

Activities

1. Given several MSDS examples, ask students to classify products.

Evaluation: Formative Test, Summative Test

Topic 2: Applicable Codes, Standards and Requirements 2:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify applicable codes and standards that regulate hazardous materials, requirements for hazardous material incidental storage, CUPA reporting requirements for an individual hazardous material, and be able to verify, document, and resolve deficiencies.

Enabling Learning Objectives (ELO):

1. Identify applicable codes and standards that regulate hazardous materials, including:
 - California Fire Code
 - California Building Code
 - NFPA
2. Identify requirements to allow incidental storage of hazardous materials, including:
 - Maximum allowable quantities
 - CFC Table 2703.1.1 (1-4)
 - CFC Table 2703.11.1
 - Permissible quantities
 - Labeling
 - Storage
 - Handling and use
 - Waste
3. Identify classification, quantities and configuration, including:
 - Observation and documentation
 - Reporting

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- Resolving or referring
- 4. Identify the reporting requirements for a Certified Unified Program Agency (CUPA) for an individual hazardous material in excess of:
 - 55 gallons
 - 200 cubic feet
 - 500 pounds
- 5. Describe how to verify deficiencies, including:
 - Observation and documentation
 - Reporting in accordance with jurisdictional codes, standards, and policies
 - Referring to appropriate level when necessary

Discussion Questions

1. What is the difference between quantities requiring a permit and maximum allowable quantities?
2. What activities regulated in the fire code does the CUPA control?

Activities

1. Given various scenarios, students will determine if the quantity and type of chemical exceeds the maximum allowable quantity.

Evaluation: Formative Test, Summative Test

Summative Testing	1:00
Formative Testing.....	2:00



Course: FI-1: Field Inspection 1B
Hours: 22:30 (19:30 = instruction / 3:00 = testing)
Designed For: The entry-level inspector
Description: At the completion of this course the student will have an introductory knowledge of fire growth potential in a building or space; portable fire extinguishers; existing fixed fire suppression systems; existing fire detection and alarm systems; hazardous conditions involving equipment, processes and operations; fire potential in the wildland urban interface environment; tents, canopies and temporary membrane structures; and emergency planning and preparedness measures.
Prerequisites: FI-1: Administration
Passing Criteria: 80%
Certification: Fire Inspector I
Class Size: 30
Restrictions: None

REQUIRED STUDENT MATERIALS	EDITION	VENDORS
▪ California Fire Code	current	International Code Council (ICC)
▪ <i>Fire Inspection and Code Enforcement</i>	7th	IFSTA
▪ Instructor handouts on WUI		SFT
REQUIRED INSTRUCTOR MATERIALS	EDITION	VENDORS
▪ California Building Code	current	International Code Council (ICC)
▪ California Fire Code	current	International Code Council (ICC)
▪ CCR Title 19	current	www.oal.ca.gov/publications.htm
▪ <i>Fire Inspection and Code Enforcement</i>	7th	IFSTA
▪ Instructor handouts on WUI		SFT
▪ Protecting Your Home from Wildfire with Jack Cohen	video	US Forest Service Rocky Mountain Research Station (www.fs.fed.us/rm/publications/titles/videos/protecting.html)
VENDORS		
SFT	State Fire Training Bookstore (916-445-8158)	http://sft.fire.ca.gov

FI-1: FIELD INSPECTION 1B COURSE SYLLABUS

Course Objectives: to provide the student with:

- a) An introduction to fire growth potential in a building or space
- b) An introduction to portable fire extinguishers
- c) An introduction to existing fixed fire suppression systems
- d) An introduction to existing fire detection and alarm systems
- e) An introduction to hazardous conditions involving equipment, processes and operations
- f) An introduction to fire growth potential in a wildland urban interface environment
- g) An introduction to emergency planning and preparedness procedures

FI-1: FIELD INSPECTION 1B COURSE SYLLABUS

Course Content 19:30

Unit 1: Introduction

Topic 1: Orientation and Administration 1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to

Enabling Learning Objectives (ELO):

Discussion Questions

1. [text]

Activities

1. [text]

Evaluation: Formative Test, Summative Test

Unit 2: Fire Growth Potential in a Building or Space (CTS 3-13)

Topic 1: Fire Behavior 2:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the fire tetrahedron, stages of a fire, and the impact of flame spread on smoke development, and identify energy sources and heat transfer mechanisms.

Enabling Learning Objectives (ELO):

1. Describe the fire triangle / tetrahedron

- Triangle: oxidizer, reducing agent (fuel), energy
- Tetrahedron: oxidizer, reducing agent (fuel), energy, chemical chain reaction

2. Describe stages of fire, including:

- Incipient
- Growth
- Fully developed
- Decay

3. Identify the sources of energy, including:

- Mechanical
- Chemical
- Electrical
- Nuclear

4. Identify the mechanisms of heat transfer, including:

- Convection
- Conduction
- Radiation
- Direct flame contact

5. Describe the impact of flame spread and smoke development, including:

- Maintaining a tenable environment
 - Flashover
 - Backdraft
- Impaired visibility caused by smoke development
- Compromised exits due to products of combustion

Discussion Questions

FI-1: FIELD INSPECTION 1B COURSE SYLLABUS

1. What do the results of a Steiner tunnel test reveal?
2. In which stage of a fire does flashover occur?
3. What are the components of the fire tetrahedron?
4. What is the most common heat transfer method found in a structure fire?
5. What form of heat transfer takes place when a fire transfers from one structure to another?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Elements that Impact Fire Growth Potential 1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe maintenance requirements for building construction elements and active fire protection systems; describe how interior finishes, decorations, decorative materials, storage practices, and safe housekeeping practices impact fire growth potential; and identify special furnishing requirements for atriums and assembly areas.

Enabling Learning Objectives (ELO):

1. Describe maintenance requirements for building construction elements (passive), including:
 - Shafts
 - Corridors
 - Rated stairwells
 - Doors
 - Fire barriers
 - Fire walls
 - Protected openings
2. Describe maintenance requirements for active fire protection building systems, including:
 - Smoke control
 - Fire sprinklers
 - Fire alarms
3. Describe how interior finishes impact fire growth potential, including:
 - Wall and ceiling finishes
 - Floor finishes
4. Describe how decorations and decorative materials impact fire growth potential
5. Identify special furnishing requirements for:
 - Atriums
 - Assembly areas
6. Identify safe housekeeping practices
7. Describe storage practices, including:
 - Piled storage
 - High piled storage
 - Rack storage
8. Describe commodity classifications (see CFC, chapter 23)
 - I, II, III, IV, high hazard, plastics
9. Describe how to verify deficiencies, including:
 - Observation and documentation
 - Reporting
 - Resolving or referring

FI-1: FIELD INSPECTION 1B COURSE SYLLABUS

Discussion Questions

1. What passive and active systems failed in the MGM fire?
2. What impact would an unprotected shaft have on a multistory building during a fire?
3. How does a material's flame spread impact fire behavior?
4. What is the difference between piled storage and high piled storage?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 3: Portable Fire Extinguishers (CTS 3-8)

Topic 1: Components and Operation1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify fire classifications of portable fire extinguishers, agents used in the portable fire extinguishers, and types of portable fire extinguishers, and determine fire extinguishers ratings, selection and local methods, and the proper use of a portable fire extinguisher.

Enabling Learning Objectives (ELO):

1. Identify fire classifications of portable fire extinguishers
 - A, B, C, D, K
2. Describe how to determine ratings of fire extinguishers
3. Identify agents used in portable fire extinguishers, including:
 - Water
 - CO₂
 - Foam
 - Dry chemical
 - Wet chemical
 - Clean agents
4. Identify portable fire extinguisher types, including:
 - Stored pressure
 - Cartridge operated
 - Pump operated
5. Describe selection and location methods, including:
 - Hazard
 - Travel distance
 - Size
 - Mounting height requirements
6. Describe the proper use of a portable fire extinguisher on a fire (PASS)
 - Pull the pin
 - Aim at the base of the fire
 - Squeeze the handle
 - Sweep the nozzle from side to side

Discussion Questions

1. How often should an inspector do a visual inspection of a fire extinguisher?
2. When does the code require a hydrostatic test for a fire extinguisher?
3. What are the classifications of fire as it relates to the classification of a fire extinguisher?

Activities

FI-1: FIELD INSPECTION 1B COURSE SYLLABUS

1. Match fire type to extinguisher type.

Evaluation: Formative Test, Summative Test

Topic 2: Inspection, Testing, and Maintenance0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to test and inspect a portable fire extinguisher.

Enabling Learning Objectives (ELO):

1. Describe the service testing and periodic inspection process, including:
 - Verifying pressure
 - Checking inspection tag(s)
 - Identifying service intervals (CCR Title 19, chapter 3)
 - Checking service collar
 - Identifying hydrostatic test identification
 - Verifying any deficiencies
 - Observe and document
 - Report
 - Resolve or refer

Discussion Questions

1. How many tags are required on a fire extinguisher?
2. When does the code require a licensed technician to inspect a fire extinguisher?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 4: Existing Fixed Fire Suppression Systems (CTS 3-6)

Topic 1: Water-Based Fire Protection Systems..... 3:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify the types and components of water-based fire protection systems, types and components of standpipes, and stationary fire pumps; and inspect, testing, and verify deficiencies in water-based fire suppression systems.

Enabling Learning Objectives (ELO):

1. Identify the types and components of water-based fire protection systems, including:
 - Automatic sprinklers
 - Water spray
 - Water mist
 - Foam water
2. Identify the types and components of standpipes, including:
 - Classifications
 - Wet and dry pipe systems
3. Identify stationary fire pumps, including:
 - Types
 - Components
 - Drivers (engine or motor)
 - Controllers
4. Describe periodic inspection and testing, including:

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- Determining the adequacy of fire protection based on the hazard present
 - Common components to be inspected
 - Other considerations
 - California adoption of NFPA 25
 - CCR Title 19
5. Describe how to verify deficiencies, including:
- Observation and documentation
 - Reporting
 - Resolving or referring

Discussion Questions

1. Is a water spray system the same as a fire sprinkler system?
2. Where do you find a dry pipe fire sprinkler system?
3. How often does the code require fire pump testing? Who can do the testing?
4. When does the code require inspection, testing, and maintenance for a fire sprinkler system?
5. When does the code require hydrostatic testing for a fire sprinkler?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Special-Agent Fire Extinguishing Systems1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify special-agent fire extinguishing system types, components, locations, and processes; and inspect, test, and verify deficiencies in special-agent fire extinguishing systems.

Enabling Learning Objectives (ELO):

1. Identify system types and components, including:
 - Dry chemical
 - Wet chemical
 - Clean agent
 - CO₂ systems
 - Foam systems
2. Identify locations and process, including:
 - Flammable and combustible liquids and gases
 - Water reactive
 - Food preparation equipment
 - File storage
 - Sensitive electronic equipment
 - Electrical transformers and switches
3. Describe periodic inspection and testing, including:
 - Determining the adequacy of fire protection based on the hazard present
 - Common components to be inspected
 - Other considerations
 - CCR Title 19; Chapter 5
4. Describe how to verify deficiencies, including:
 - Observation and documentation
 - Reporting

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- Resolving or referring

Discussion Questions

1. What is the most common application for a wet chemical fire extinguishing system?
2. What is the most common application for a dry chemical fire extinguishing system?
3. What is the most common application for a clean agent fire extinguishing system?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 5: Existing Fire Detection and Alarm Systems (CTS 3-7)

Topic 1: Fire Alarm Systems and Components.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify detection and alarm system components, automatic alarm-initiating devices, notification methods, when panels require monitoring, and the types of signals transmitted.

Enabling Learning Objectives (ELO):

1. Identify detection and alarm system components, including:
 - Fire alarm control units
 - Power supplies
 - Initiating devices
 - Alerting devices
 - Auxiliary control interface
2. Identify automatic alarm-initiating devices, including:
 - Fixed temperature heat detectors
 - Fusible link
 - Frangible bulb
3. Identify notification methods, including:
 - Public mode
 - Private mode
4. Identify when panels must be monitored, including:
 - Supervised
 - Non-supervised
5. Identify the types of signals that are transmitted, including:
 - Supervisory
 - System trouble
 - Alarms

Discussion Questions

1. What is the difference between an initiating and a notification appliance?
2. What is the difference between a supervisory and a trouble signal?
3. What types of signals does the code require be transmitted to a central station?
4. What is the difference between a public mode and a private mode fire alarm system?
5. When is a fire alarm system required to be monitored?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

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Topic 2: Inspection, Testing and Maintenance.....1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to test and inspect existing fire detection and alarm systems.

Enabling Learning Objectives (ELO):

1. Describe the service testing and periodic inspection process, including:
 - Conducting the visual observation of components
 - Determining panel readiness
 - Confirming that all initiating devices are unobstructed
 - Reviewing the owner's documentation of periodic inspections
 - Reviewing any third-party notices of deficiencies in the system
 - Verifying deficiencies, including:
 - Observation and documentation
 - Reporting
 - Resolving or referring

Discussion Questions

1. When can a fire alarm system be disabled?
2. Who should be notified when a fire alarm system is disabled?
3. What is the inspection interval for inspection of a fire alarm system?

Activities

1. Given a hypothetical scenario, have students complete an NFPA 72 Inspection and Testing form.

Evaluation: Formative Test, Summative Test

Unit 6: Hazardous Conditions Involving Equipment, Processes and Operations (CTS 3-9)

Topic 1: Recognition of Hazardous Conditions1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe safe operations practices and techniques; identify applicable codes, standards, and policies; identify unsafe conditions and behaviors; and verify deficiencies.

Enabling Learning Objectives (ELO):

1. Describe the practices and techniques of safe operations, including:
 - Dust production
 - Flammable and combustible materials
 - Hazardous materials storage and handling
 - Ignition sources
 - Unsafe housekeeping
 - Vapor recovery
2. Identify the applicable codes, standards, and policies of the jurisdiction
3. Identify unsafe behaviors such as:
 - Poor housekeeping
 - Ignoring ignition sources
 - Open burning
 - Improper use of electricity
 - Careless use of flammable and combustible liquids
4. Identify unsafe conditions such as:
 - Electrical Hazards
 - Material storage facilities

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- Heating, ventilating, and air-conditioning equipment systems
 - Cooking equipment
 - Industrial furnaces and ovens
 - Powered industrial trucks
5. Describe how to verify deficiencies, including:
1. Observation and documentation
 2. Reporting
 3. Resolving or referring

Discussion Questions

1. When does the code allow open burning?
2. What common fire hazards are often found during an inspection?
3. When does the code require fabrics to be flame retardant? What code regulates fabrics?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 7: Fire Potential in the Wildland Urban Interface Environment (CTS 5-1 and 5-2)

Topic 1: History1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the wildland urban interface environment and the consequences of severe wildland fire conditions.

Enabling Learning Objectives (ELO):

1. Describe the wildland urban interface
 - A location where significant combustible vegetation meets the built environment, and there is the potential for fire to transition from vegetation to those structures
2. Identify the history of fire in the wildland urban interface, including:
 - Paint fire (Montecito)
 - Tunnel fire (Oakland)
3. Describe the consequences of severe wildland fire conditions
 - Interface conflagrations will exceed fire suppression resource capabilities
 - Life loss
 - Property loss
 - Environmental impact
 - Economic impact

Discussion Questions

1. What does WUI stand for?
1. What are some of the fire problems illustrated by the Paint Fire (Santa Barbara / 1990)?
2. What are some of the fire problems illustrated by the Tunnel Fire (Caldecott Tunnel / 1984)?

Activities

1. Have students identify the consequences of a WUI fire and discuss their ideas in small groups.

Evaluation: Formative Test, Summative Test

Topic 2: Fire Behavior in a Wildland Urban Interface1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify factors that impact fire behavior in the wildland urban interface environment and methods of heat transfer.

Enabling Learning Objectives (ELO):

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1. Identify factors impacting wildland fire behavior, including:
 - Fuel
 - Fuel loading
 - Combustible vegetation
 - Fire-resistant plant materials
 - Fuel moisture content
 - Topography
 - Aspect
 - Slope
 - Features
 - Weather
 - Wind
 - Temperature
 - Relative humidity
 - Atmospheric stability
 - Precipitation
2. Identify methods of heat transfer, including:
 - Direct flame contact
 - Convection
 - Radiation
 - Ember transfer
 - Structure to structure
 - Fuel and fire laddering
 - Crown fire migration

Discussion Questions

1. How do weather conditions impact fire behavior?
2. How is fuel loading measured in a wildland urban interface environment?
3. What is aspect?
4. What are the types of fire transfer?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 3: Fire Hazard Severity Zones.....1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the fire hazard severity zone development process, define severity zone classifications, identify areas of responsibility, and describe construction methods as they relate to zone classification.

Enabling Learning Objectives (ELO):

1. Describe the fire hazard severity zone development process, including:
 - Fuel hazard
 - Weather
 - Fire history
 - Topography
 - Fuel receptivity
2. Define severity zone classifications
 - Moderate

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- High
 - Very high
3. Identify areas of responsibility, including:
 - Local Responsibility Area (LRA)
 - State Responsibility Area (SRA)
 - Federal lands
 4. Describe construction requirements depending on zone classification
 - Special construction features (CBC chapter 7A)
 - Vegetation management requirements (CBC chapter 7A and CFC chapter 47)

Discussion Questions

1. What are the differences between an SRA and an LRA?
2. Can an SRA be within city limits?
3. In which severity zones do the requirements of CBC chapter 7A apply?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 4: Wildland Urban Interface Issues 1:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe methods for dealing with fire hazards associated with a wildland urban interface environment, the components of a vegetation management plan, and documentation and reporting methods within a wildland urban interface environment.

Enabling Learning Objectives (ELO):

1. Describe methods for dealing with fire hazards associated with wildland urban interface environments, including:
 - Prescriptive construction requirements found in CBC, chapter 7A
 - Prescriptive fuel modification
 - Performance-based design
 - Master-planned community
 - Construction features
 - Engineered fuel modification zone
2. Describe the components of a vegetation management plan, including:
 - Defensible space
 - Size, distance, and zones
 - Fuel modification
 - Changing existing plant materials
 - Fuel reduction
 - Reducing the amount of existing vegetation
 - Wildland urban interface maintenance
 - As required by the AHJ or in accordance with a fuel management plan
3. Describe documentation and reporting methods in a wildland urban interface environment, including:
 - Observation and documentation
 - Reporting
 - Resolving or referring

Discussion Questions

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1. What are the components of a vegetation management plan?
2. What are the components of a master-planned community in a WUI environment?
3. What construction features does chapter 7A of CBC modify for structures in a WUI environment?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 8: Tents, Canopies and Temporary Membrane Structures (CTS 3-15)

Topic 1: Tents, Canopies and Temporary Membrane Structures1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to define the terms "tent", "canopy" and "temporary membrane structure", identify the state requirements for each, and identify when each is regulated by the California Building Code.

Enabling Learning Objectives (ELO):

1. Define the following terms:
 - Tent
 - Canopy
 - Temporary membrane structure
2. Identify the state requirements for tents, canopies and other temporary membrane structures (10 persons or greater) (see CCR Title 19 Chapter 2 article 3), including:
 - Vehicle parking
 - Location on site
 - Structural requirements
 - Prohibited smoking
 - Fireworks and open flame
 - Fire extinguishers and other fire protection equipment
 - Fire safety personnel
 - Abatement of fire and panic hazards
 - Exit requirements
 - Cooking and heating equipment
 - Flame resistance
 - Labeling of tents
3. Identify when the California Building Code regulates a tent, canopy, or membrane structure

Discussion Questions

1. What is the difference between a tent and a canopy?
2. What occupant load requires the presence of fire safety personnel?
3. What canopy size does the code exempt from permitting and regulation?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 9: Emergency Planning and Preparedness Measures (CTS 3-10)

Topic 1: Emergency Evacuation and Relocation Requirements and Elements0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the elements of an evacuation plan and identify which occupancies require an evacuation plan, the

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frequency of fire drills, and special considerations based on specific occupancies.

Enabling Learning Objectives (ELO):

1. Identify what occupancies are required to have an evacuation plan, including:
 - K-12 Schools
 - High-rise buildings
 - Hospitals
 - Care facilities
 - Hotels
 - Organized camps
 - Office buildings with two or more stories
 - Covered malls
 - (See CCR Title 19, article 1, section 3.09)
2. Describe the elements of an evacuation plan, including:
 - Evacuation routes: maps identifying current location and egress routes
 - Types of evacuations (partial vs. full)
 - Monitor duties when evaluating a fire drill
 - Occupant duties in participating in fire drills
3. Identify the frequency with which fire drills must be practiced (Title 19 & CFC 405.2)
4. Identify special considerations based on specific occupancies:
 - Safe dispersal area for buildings, including:
 - Minimum of 50 feet from building
 - Five square feet per person
 - Hospitals are designed to shelter patients in place by compartmentalization (discuss the design and shelter in-place concept)
5. Describe how to verify deficiencies, including:
 - Observation and documentation
 - Reporting
 - Resolving or referring

Discussion Questions

1. How often should a high rise building have a fire drill?
2. What is the required frequency of fire drills for public schools?
3. In what code can you find the public school fire drill requirements?

Activities

1. To be determined by the instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Conducting an Emergency Evacuation Drill0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify common human behavior associated with emergencies, conduct a fire drill, and identify issues to cover in a post-drill debriefing.

Enabling Learning Objectives (ELO):

1. Identify the human behavior that occurs during fires and other emergencies, including:
 - Panic
 - Apathy
 - It is a misdemeanor offense to fail to respond to an evacuation order as part of an emergency or fire drill (see CCR, Title 19, section 3.10)

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- Exit imprinting (people tend to leave the way they came in)
- 2. Define the considerations to conduct and/or evaluate fire drills, including:
 - Should be generally scheduled in advance
 - Conduct during business hours
 - Coordinate with the local agency
 - Notify dispatch of the drill, time and location
- 3. Describe conducting a fire drill, including:
 - Observing and documenting participants' actions
 - Verifying evacuation as prescribed by plan
- 4. Identify issues to cover in a post-drill debriefing, including:
 - Accountability and participation of occupants
 - Time needed to evacuate the building as prescribed in the plan
 - Did the fire drill follow the written plan
 - Methods to improve fire drill plan
 - Identify revisions to improve the fire drill plan

Discussion Questions

1. Who should a fire inspector notify before conducting and after completing a fire drill?
2. How can a fire inspector motivate people to participate in a fire drill?

Activities

1. Conduct a fire drill with the class and discuss the behavior of the class during the exercise.

Evaluation: Formative Test, Summative Test

Summative Testing	1:00
Formative Testing.....	2:00



Course: FI 1 – Fireworks and Explosives
Hours: 10:30 (7:30 = instruction / 3:00 = testing)

Designed For: The entry-level inspector

Description: Upon completion of this course the student will have an introductory knowledge of the laws and regulations related to fireworks and explosives including classifications, licenses and permits, storage, seizure, retail fireworks stands, special effects, public displays, and model rockets.

Prerequisites: None

Passing Criteria: 80%

Certification: Fire Inspector I

Class Size: 30

Restrictions: None

REQUIRED STUDENT MATERIALS		EDITION	VENDORS
▪ CCR Title 19		current	
REQUIRED INSTRUCTOR MATERIALS		EDITION	VENDORS
▪ CCR Title 19		current	
▪ NFPA 1123		current	
VENDORS			
SFT	State Fire Training Bookstore (916-445-8158)		http://sft.fire.ca.gov

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Course Objectives: to provide the student with...

- a) An introduction to laws and regulations related to fireworks and explosives
- b) An introduction to fireworks classifications, licenses and permits, storage, and seizure
- c) An introduction to retail fireworks stands, special effects, public fireworks displays and model rockets
- d) An introduction to explosives and their required licenses and permits

Course Content 7:30

Unit 1: Introduction

Topic 1: Orientation and Administration 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to

Enabling Learning Objectives (ELO):

- 1. [text]

Discussion Questions

- 1. [text]

Activities

- 1. [text]

Evaluation: Formative Test, Summative Test

FI-1: FIREWORKS AND EXPLOSIVES COURSE SYLLABUS

Unit 2: Laws and Regulations (CTS: 4-1)

Topic 1: Laws and Regulations.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe chapter 33 of the California Fire Code and the federal Department of Transportation's responsibility for transporting fireworks and explosives, and identify California regulations pertaining to fireworks and explosives.

Enabling Learning Objectives (ELO):

1. Describe CFC Chapter 33
 - Note reference to CCR Title 19
2. Identify regulations pertaining to fireworks, including:
 - CCR Title 19 Chapter 6
3. Identify regulations pertaining to explosives, including:
 - CCR Title 19 Chapter 10
4. Describe federal department of transportation responsibility for transporting fireworks and explosives

Discussion Questions

1. Which chapter of CCR Title 19 deals with explosives?
2. Which chapter of CCR Title 19 deals with fireworks?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Unit 3: Fireworks (CTS: 4-1)

Topic 1: Classifications0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify various classifications of fireworks.

Enabling Learning Objectives (ELO):

1. Identify various classifications of fireworks, including:
 - Dangerous
 - Safe and sane
 - Agriculture and wildlife
 - Model rocket motor
 - Emergency signaling devices
 - Exempt
 - Party popper
 - High power rocket motors

Discussion Questions

1. What are considered safe and sane fireworks?
1. Are safe and sane fireworks approved for use statewide?
2. When might someone use an agriculture/wildlife firework?
3. What is the difference between a model rocket motor and a high power rocket motor?

Activities

1. Match situations to fireworks classifications

Evaluation: Formative Test, Summative Test

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Topic 2: Licenses and Permits 1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe licenses required for fireworks, jurisdictional authority for safe and sane fireworks, permit application requirements, how to verify deficiencies, and be able to identify the State Fire Marshal seal of registration.

Enabling Learning Objectives (ELO):

1. Describe the types of licenses required for fireworks (CCR, Title 19, section 981.5)
 - Model rocket
 - Pyrotechnic operator
2. Identify the State Fire Marshal seal of registration
 - California State Fire Marshal has an approved seal (see CCR, Title 19)
 - Seal includes
 - Fireworks classification (at the top)
 - Manufacturer (at the bottom)
3. Describe jurisdictional authority for safe and sane fireworks
 - Permitted by State Fire Marshal
 - Can be regulated or prohibited by local authority ordinance
4. Identify types of permit for:
 - Public display
 - Model rockets
 - Special effects
5. Describe local permit application requirements, including:
 - Date and time of display
 - Size and number of shells
 - Fallout area diagram
 - Worker's comp insurance
 - State Fire Marshal's license
 - Name of company providing product
 - Identifications of all assistants
 - Shipping and US Department of Transportation permit verification
6. Describe how to verify deficiencies, including:
 - Observation and documentation
 - Reporting
 - Resolving or referring

Discussion Questions

1. When can someone use safe and sane fireworks?
2. Who can operate a public display of fireworks?
3. What is considered close proximity?
4. Can you discharge fireworks inside a building?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 3: Storage 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe types of

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magazines and types of storage for safe and sane fireworks, and identify access roads and signs required for fireworks storage.

Enabling Learning Objectives (ELO):

1. Describe types of magazines
2. Describe types of storage for safe and sane fireworks
3. Identify access roads and signs required for fireworks storage

Discussion Questions

1. What type(s) of storage does the code require for a public display?

Activities

1. To be determined by instructor

Evaluation: Formative Test, Summative Test

Topic 4: Seizure.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the process to seize fireworks.

Enabling Learning Objectives (ELO):

1. Describe procedures for seizing fireworks
 - As prescribed by local authority
 - Regulated under California laws and regulations

Discussion Questions

1. Who could enforce seizure operations within your jurisdiction?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 5: Retail Fireworks Stands.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able carry out a required safety inspection of a fireworks stand.

Enabling Learning Objectives (ELO):

1. Describe the required safety inspection of fireworks stands, including:
 - Requirements contained in CCR, Title 19
 - No smoking
 - Storage and handling
 - Associated permits (electrical)
 - Electrical power sources
 - Verification of age of sellers
 - Prohibition of alcohol and narcotics

Discussion Questions

1. When (dates and times) can fireworks be sold?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 6: Special Effects.....0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the physical hazards and requirements for special effects displays.

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Enabling Learning Objectives (ELO):

1. Describe the requirements for special effects displays, including:
 - Operator permits and licensing
 - Orientation meeting on the design and shooting of the event
 - Materials storage and handling
 - Mixing
2. Describe physical hazards, including:
 - Fire
 - Explosion
 - Smoke
 - Bright light

Discussion Questions

1. What are the greatest concerns related to special effects shoots?
2. When should local authorities prohibit a special effects shoot?
3. What is the role of a fire safety officer at a special effects shoot?
4. What training is available to qualify an inspector to properly oversee a special effects event?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 7: Public Display1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify firing methods and describe permit requirements, mortars and aerial shells, site location requirements, safety tools and equipment, personal safety equipment, and post display procedures for public fireworks displays.

Enabling Learning Objectives (ELO):

1. Describe the requirements for public display permits, including:
 - Licensed operator
 - Insurance
 2. Identify firing methods, including:
 - Electronic
 - Hand fired
 3. Describe mortars and aerial shells, including:
 - Metal
 - Cardboard
 - Plastic
 - Well secured to prevent movement
 - Angled if necessary to permit proper trajectory and landing
 - Undamaged and in good condition
 - Properly sized for launch tube
 - Properly and completely loaded
 4. Describe site location requirements, including:
 - Map to plan location
 - Not in close proximity to building, public, or a wildland urban interface environment (NFPA 1123)
 - Confirm wind and other environmental factors will not impact shoot
-

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5. Describe safety tools and equipment, including:
 - Water fire extinguisher
 - Bucket to soak duds
 - Flashlight(s)
6. Describe personal protective equipment, including:
 - Proper training and supervision
 - Helmet
 - Goggles
 - Gloves
 - Long sleeve flame-retardant jacket
 - Fire resistive long pants
 - Closed-toe boots or shoes
7. Describe post display procedures (Title 19 section 1005), including:
 - Reports
 - Notifications
 - Unfired shells

Discussion Questions

1. What is considered an aerial display?
2. Where would you find the shell size as related to the mortar? (CCR, title 19, section 999)

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 8: Model Rockets0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the physical hazards and requirements related to model rockets.

Enabling Learning Objectives (ELO):

1. Describe requirements for model rockets, including:
 - Storage and sales
 - Classifications and labeling
 - Standards and use
 - Site considerations
 - Minimum age
 - Operator requirements
 - Permit requirements
2. Describe physical hazards, including:
 - Potential for fire or explosion
 - Potential for trajectory injury
 - Proximity to structures and wildland urban interface environments

Discussion Questions

1. Which permits and licenses does the code require to shoot a model rocket?
2. Which classifications and labels does the code require for model rockets? (CCR, title 19 article 17)

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

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Unit 4: Explosives (CTS: 4-1)

Topic 1: Identification 1:00

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to identify the fire department's role, hazards, classifications, storage requirements, and AHJ notification requirements as they related to explosives, as well as, ammunition and primers, smokeless powder and black sporting powder, and construction of a class I and class II magazine.

Enabling Learning Objectives (ELO):

1. Identify the fire department's role in regulating explosives, including:
 - Secondary to the sheriff's department in most jurisdictions
 - Some interaction with police department and sheriff department
2. Identify the hazards of explosives
3. Identify the classifications for explosives
4. Identify storage requirements
5. Identify AHJ notification requirements
6. Identify small arms ammunition and primers
7. Identify smokeless powder and black sporting powder
8. Identify construction of a class I and class II magazine

Discussion Questions

1. What does the code require regarding smokeless powder and black sporting powder retail displays?
2. When does the code require a class I magazine for storage?

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Topic 2: Licenses and Permits 0:30

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe general types of regulated explosives, required permits, and display and storage requirements.

Enabling Learning Objectives (ELO):

1. Describe the general types of regulated explosives, including:
 - Black powder
 - Smokeless powder
 - Dynamite
2. Describe the types of permits required for explosives, including those listed in:
 - California Fire Code
 - CCR, Title 19
2. Describe display and storage requirements for:
 - Smokeless powder
 - Black sporting powder

Discussion Questions

1. Where would you find permitting requirements for explosives? (CCR, title 19 section 1565.1)

Activities

1. To be determined by instructor.

Evaluation: Formative Test, Summative Test

Summative Testing 1:00

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Formative Testing..... 2:00
